

OPERATING SUMMARY

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CITY OF

CORNWALL

WATER POLLUTION CONTROL PLANT

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CORNWALL

ST. LAWRENCE RIVER

WATER POLLUTION CONTROL CENTRE NO. 1

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by

Plant Performance Unit

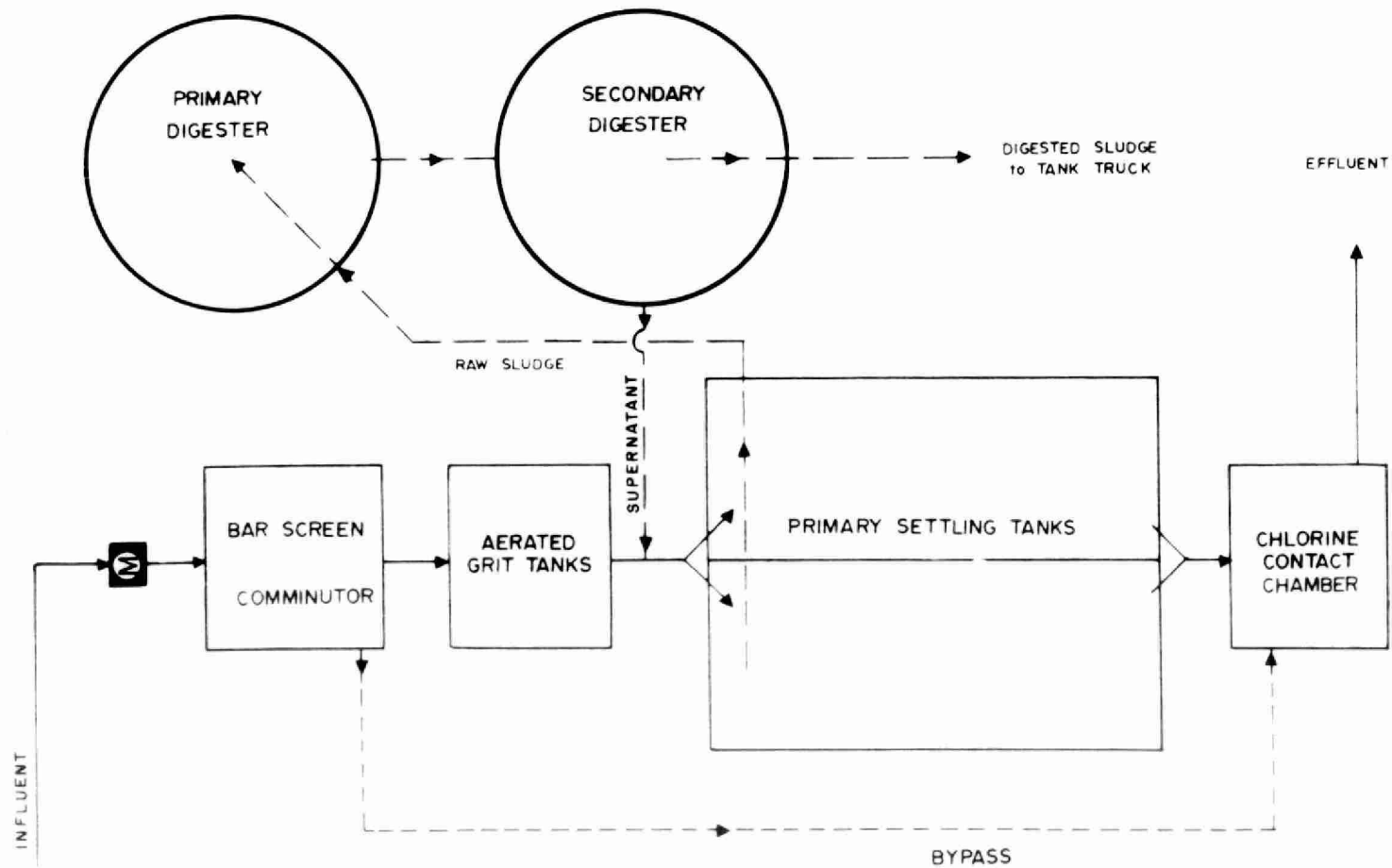
TECHNICAL SERVICES BRANCH

T. Cross, Director

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CITY OF
CORNWALL
WATER POLLUTION CONTROL PLANT



DESIGN DATA

PROJECT City of Cornwall WPCP

PROJECT NO. 1-0001-66

DESIGN FLOW 8.25 mgd

DESIGN POPULATION 66,000

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: Two Type "C"

Screening (Bypass channel)

Size: 2" spaces

Grit Removal

Type: Aerated; grit removed by
clamshell bucket
Size: Two 38' 6" x 15' 10" x 13' 5"
swd (98,500 gal)
Retention: 17 min

Air Supply

Type: Hoffman
Size: Two 1,100 scfm (also for channel
aeration)

Primary Sedimentation

Type: Jeffrey
Size: Two 143' x 48' x 12' (1.245
mil gal)
Retention: 3 hours
Loading: Surface, 600 gal/ft²/day
Weir, 14300 gal/ft/day

CHLORINATION

Chlorinator

Type: W & T
Size: One 2,000 lb/day with evaporator

Chlorine Contact Chamber

Size: One 48' 7" x 26' 11" x 10' 6"
(85,800 gal)
Retention: 15 min

OUTFALL

- to St. Lawrence River

SLUDGE HANDLING

Digestion System - Two-stage

Primary Digester -
Type: Perth (gas mixed) with fixed
concrete cover
Size: One 65' dia x 24' swd (82,500
cu ft or 0.515 mil gal)
Loading: 2.88 lb/cu ft/mo

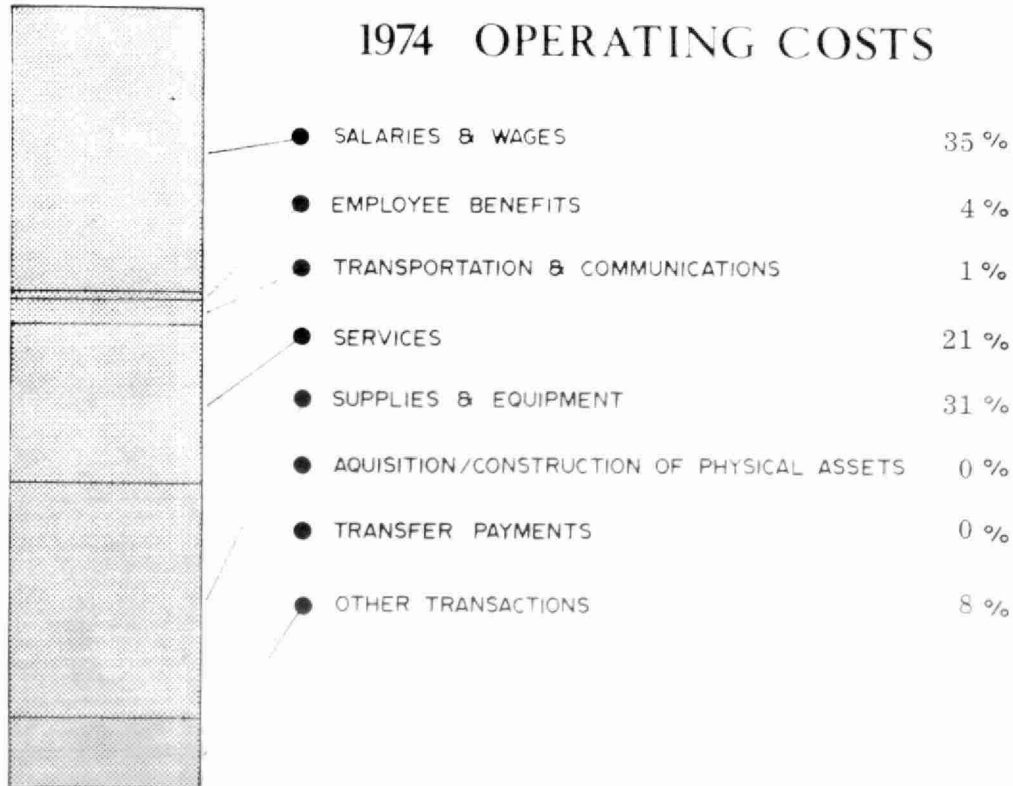
Secondary Digester -
Size: One 65' dia x 24' swd (82,500
cu ft or 0.515 mil gal)
Total Loading: 1.44 lb/cu ft/mo

Disposal

- by tank truck

ANNUAL COSTS

1974 OPERATING COSTS



YEARLY OPERATING COSTS

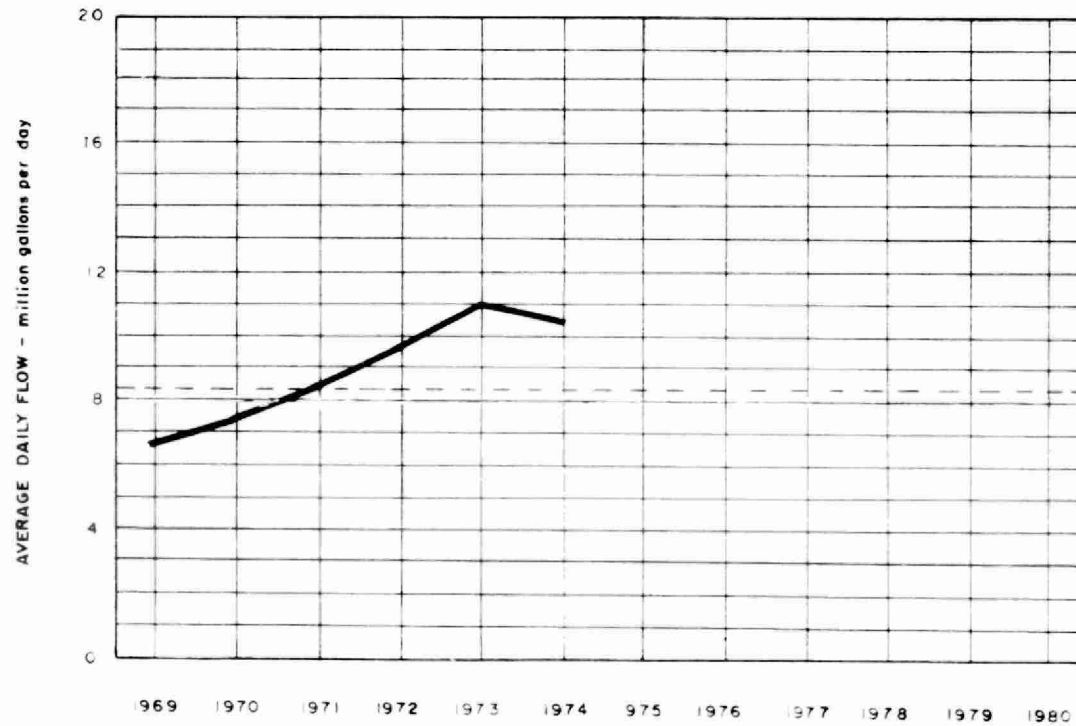
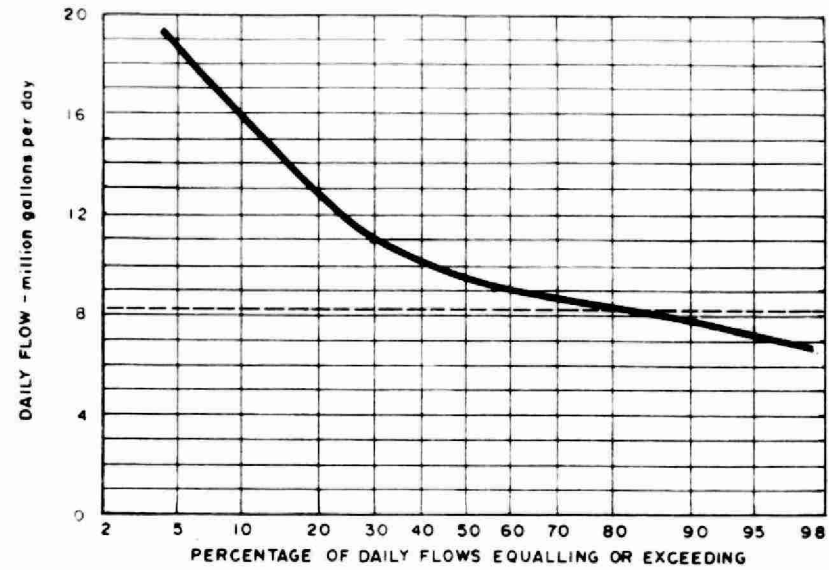
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G.	¢/lb BOD
1974	3812	252,588	66	83

OPERATING EXPENDITURES

Regular Staff	\$ 87152	\$
Casual (Unclassified) Staff	2055	
TOTAL SALARIES AND WAGES		89207
TOTAL EMPLOYEE BENEFITS		9092
TOTAL TRANSPORTATION AND COMMUNICATIONS		3628
Insurance	1946	
Sludge Haulage	47322	
Repairs and Maintenance	2392	
Other Services	1615	
TOTAL SERVICES		53275
Machinery and Equipment	7595	
Chemicals	32151	
Utilities	26568	
Other Supplies and Equipment	11993	
TOTAL SUPPLIES AND EQUIPMENT		78307
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		19079
GRAND TOTAL	GRAND TOTAL	\$ 252588

PROCESS DATA

FLOWS

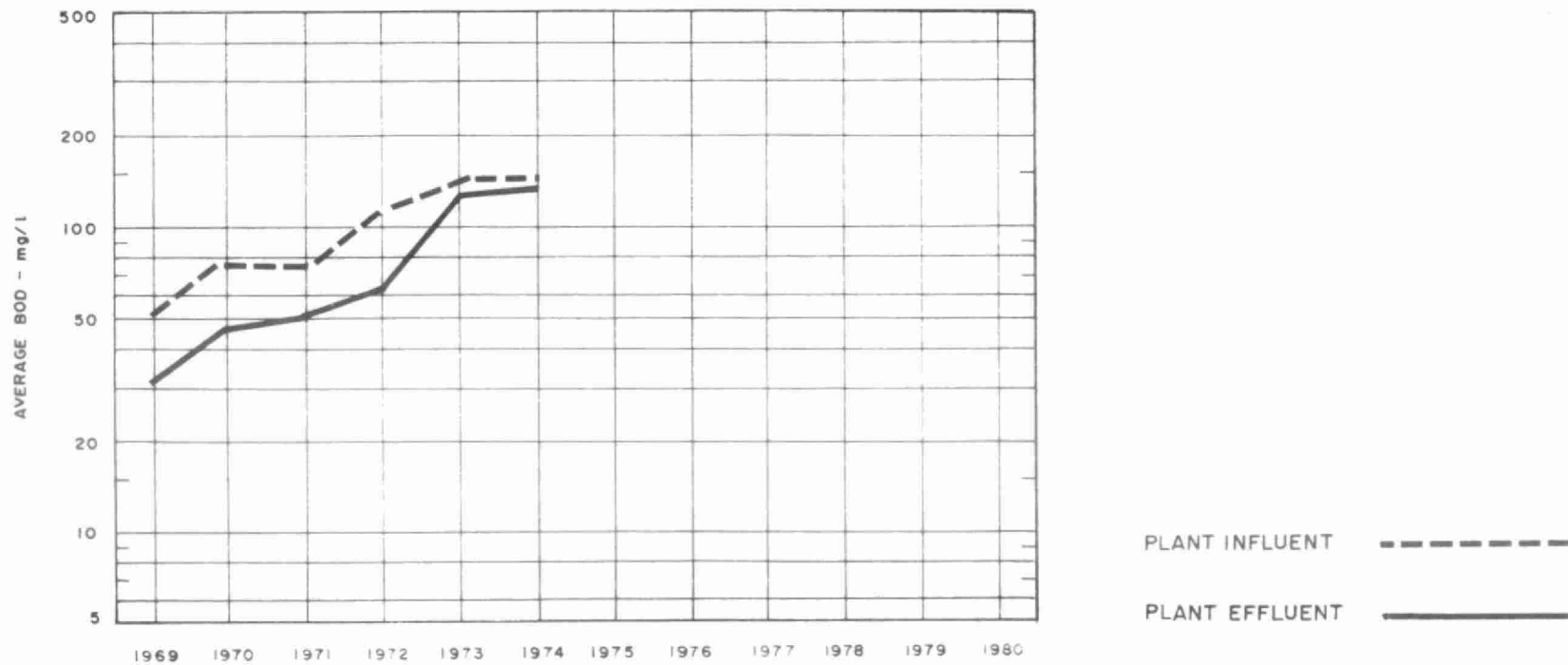
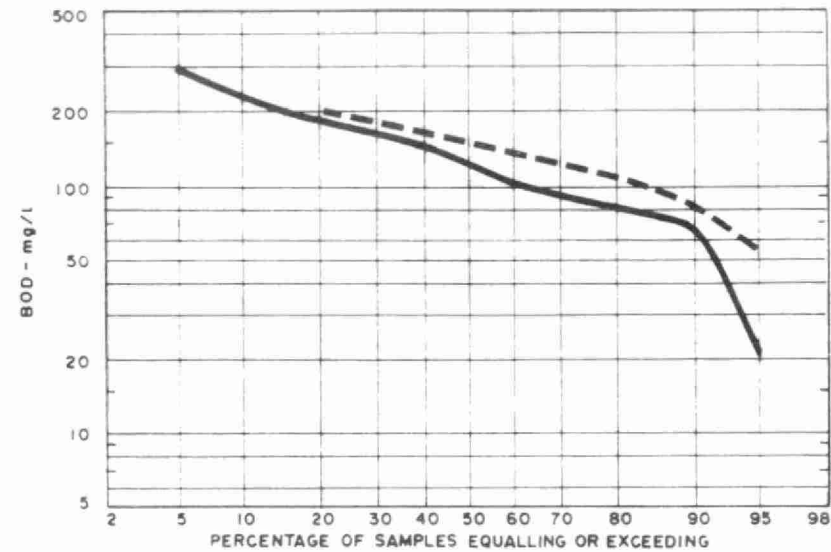


DESIGN CAPACITY - - - - -

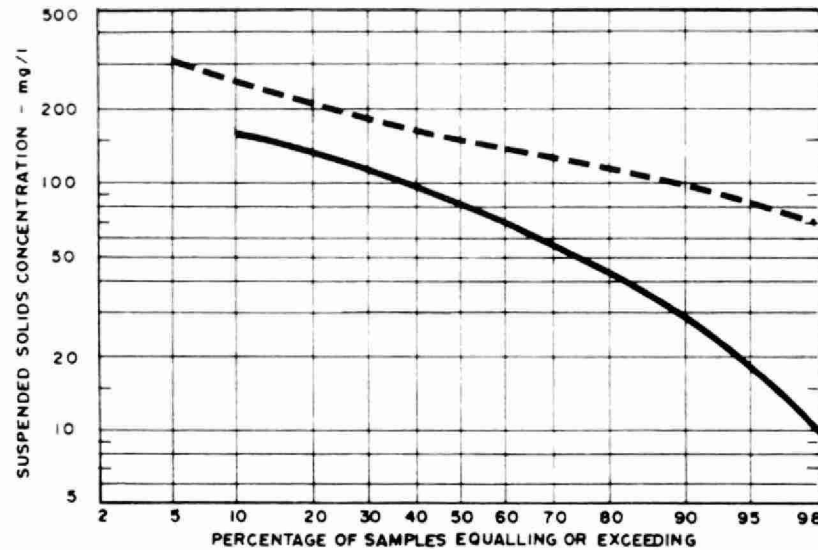
PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l P	mg/l P
JAN	333.3	10.8	20.0	60	22	63	127	131	54	59	257	1.3	1.4
FEB	259.0	9.2	18.0	195	250	0	0	181	88	51	241	5.0	3.3
MAR	356.7	11.5	19.9	125	108	14	61	218	100	54	421		
APR	468.6	15.6	18.9	120	85	29	164	235	192	18	201	2.4	2.4
MAY	439.2	14.2	19.6	240	160	33	351	172	65	62	470	2.0	2.0
JUNE	304.5	10.1	13.6	80	102	0	0	187	64	66	374	6.2	4.5
JULY	294.5	9.5	13.4	202	155	23	138	160	80	50	236	3.7	2.8
AUG	272.8	8.8	9.8	126	130	0	0	137	115	16	60	3.4	3.3
SEPT	261.0	8.7	10.6	177	195	0	0	131	70	47	159	4.2	3.7
OCT	260.1	8.4	18.0					131	143	0	0		
NOV	282.4	9.4	17.6	150	90	40	169	130	61	53	195	4.2	3.2
DEC	279.8	9.0	16.3	100	82	18	50	114	67	41	131	2.0	1.6
TOTAL	3811.9	-	-	-	-	-		-	-	-		-	-
AVG.		10.4	MAXIMUM 20.0	141	133	6	25	160	86	47	235	3.6	3.0
No. of Samples	-	-	-	18	18	-	-	79	79	-	-	14	14

BIOCHEMICAL OXYGEN DEMAND

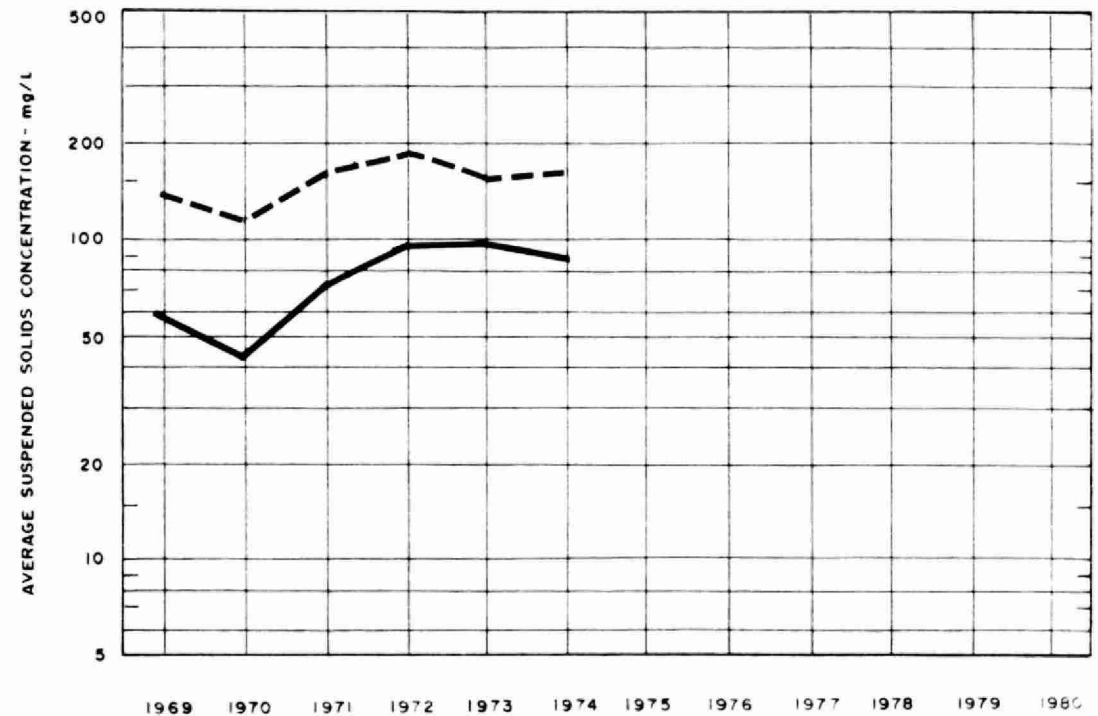


SUSPENDED SOLIDS

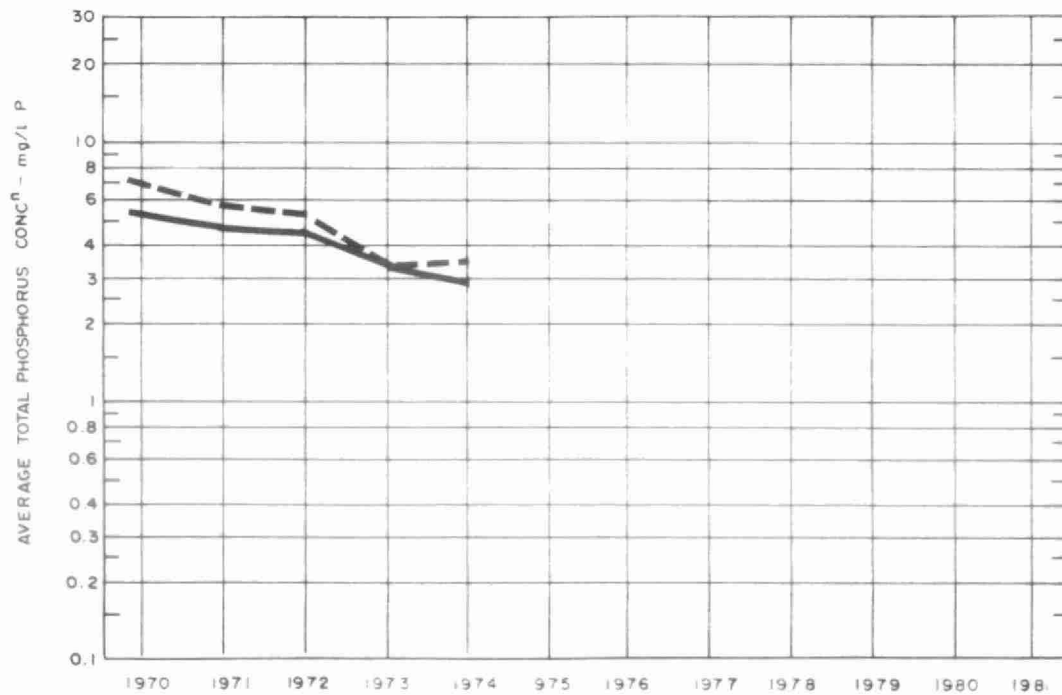
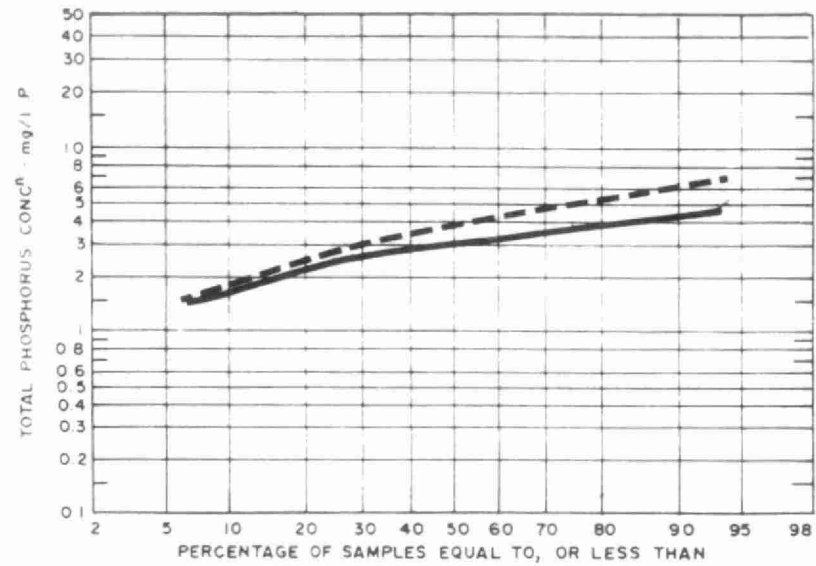


PLANT INFLUENT - - - - -

PLANT EFFLUENT —————



PHOSPHORUS

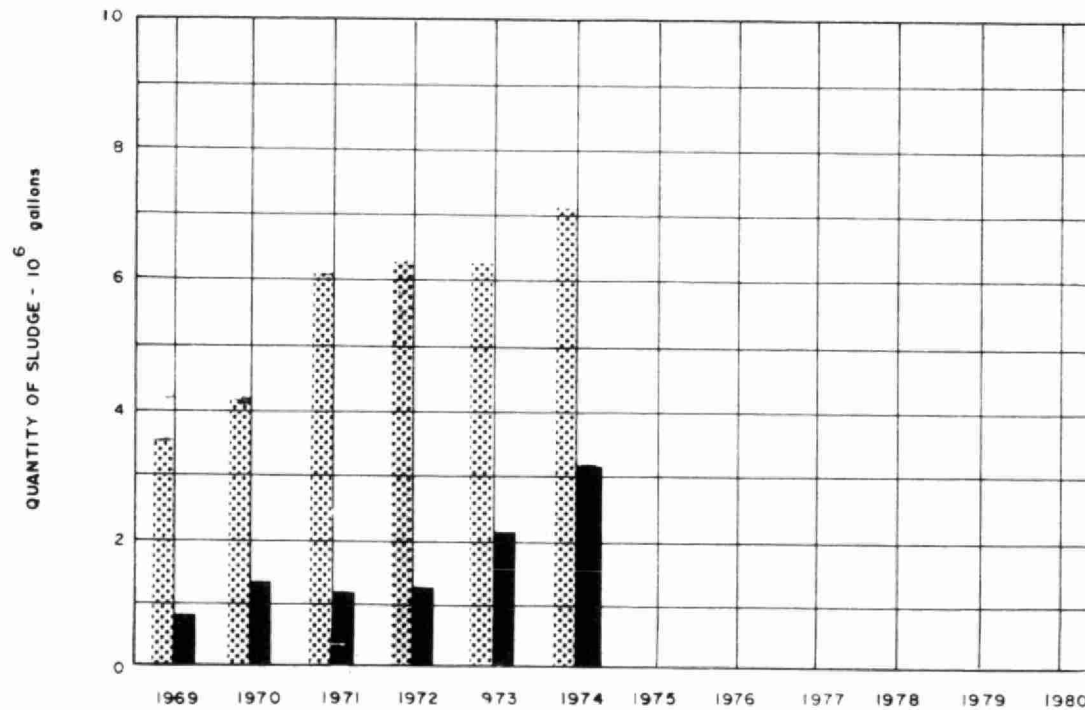
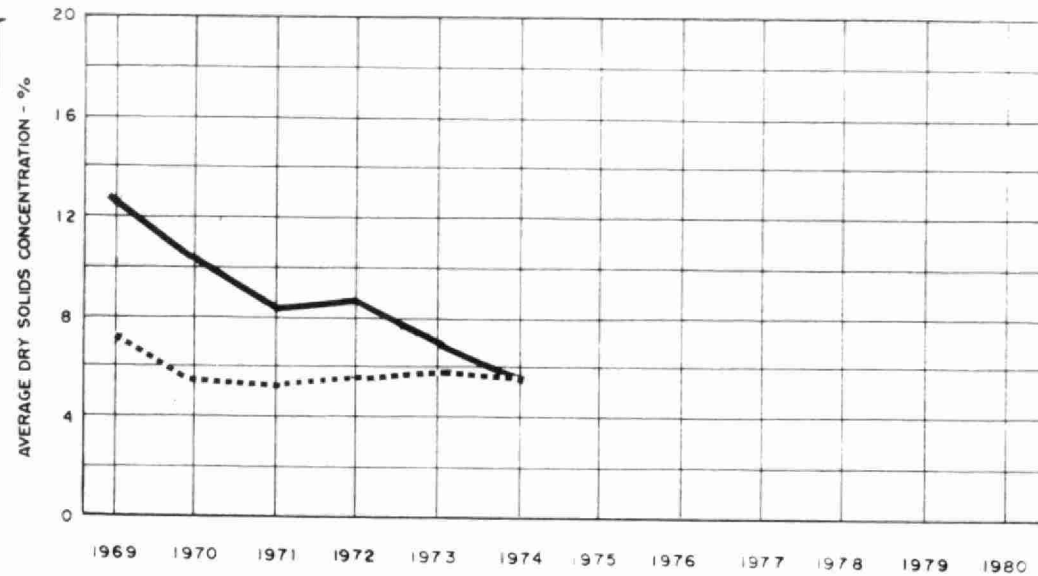


PLANT INFLUENT -----

PLANT EFFLUENT _____

DIGESTION

RAW SLUDGE
DIGESTED SLUDGE —————



RAW SLUDGE TO DIGESTER
DIGESTED SLUDGE REMOVED —————

TREATMENT DATA

MONTH	GRIT	CHLORINATION		SLUDGE DIGESTION and DISPOSAL							
	QUANTITY REMOVED cubic feet	CHLORINE USED 10 ³ pounds	AVERAGE DOSAGE mg/l	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT	SLUDGE HAULED cubic yards
				QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	QUANTITY REMOVED 10 ³ gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	TOTAL SOLIDS %	
JAN	378	17.7	5.3	454	4.5	57	224	7.0	43	.3	1332
FEB	756	13.7	5.3	539	6.3	59	198	5.4		.2	1176
MAR	0	19.1	5.4	454	4.5	57	224	7.0	43	.3	1332
APR	0	19.8	4.2	539	6.3	59	198	5.4		.2	1176
MAY	0	25.2	5.7	649	6.4	52	212	5.7		1.8	1260
JUNE	1080	18.9	6.2	787	5.9	65	277	5.7			1644
JULY	1080	31.8	10.7	640	4.9	56	229	5.6			1358
AUG	0	41.5	15.2	532	4.0	62	293	7.2			1738
SEPT	648	26.4	9.0	590	3.9	68	418	3.1			2480
OCT	0	34.8	13.4	736	4.8	66	676				4013
NOV	0	30.9	11.0	510	5.3	72	178	3.0			1056
DEC	0	29.2	10.5	794	4.9	68	0	1.8			0
TOTAL	3942	309.0	—	7224	—	—	3127	—	—	—	18565
AVG.	1.0 cubic feet/mil gal	25.8	8.1	602	5.1	62	261	5.2	43	.6	1547

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